

PLAN SYMBOLS

QUARTER SECTION LINE	---
SECTION LINE	---
SIXTEENTH SECTION LINE	---
STATE BOUNDARY	---
TOWNSHIP LINE	---
CONTOUR - INDEX	---
CONTOUR - INTERMEDIATE	---
ROAD - TRAIL	---
ROAD - GRAVEL (UNIMPROVED)	---
ROADWAY	---
ROAD - SHOULDER GRAVEL	---
PARKING - GRAVEL (UNIMPROVED)	---
PARKING	---
ROAD - CENTERLINE	---
ENTRANCE	---
CURB	---
GUARDRAIL	---
EXISTING STEAM	---
EXISTING GAS MAIN	---
EXISTING SANITARY SEWER	---
EXISTING STORM DRAIN	---
EXISTING WATER MAIN	---
EXISTING ELEC-UG	---
EXISTING TEL-UG	---
EXISTING TY-UG	---
PROPOSED STEAM	---
PROPOSED GAS MAIN	---
PROPOSED SANITARY SEWER	---
PROPOSED STORM DRAIN	---
PROPOSED WATER MAIN	---
PROPOSED ELEC-UG	---
PROPOSED TEL-UG	---
PROPOSED TY-UG	---
PROPOSED SUB-DRAIN	---
CULVERT - (LINE)	---
EXISTING RIGHT OF WAY	---
PROPERTY LINE	---
FENCE - CHAINLINK	---
FENCE - UNIDENTIFIED	---
FENCE - BARB WIRE	---
SIDEWALK - BITUMINOUS	---
RAILROADS	---
PAINTED STREET SYMBOLS	---
CROSSWALK LINES	---
ALLEYS - NO CURBS, CONCRETE	---
RECREATIONAL PATHS	---
TREE - UNIDENTIFIED (LINE)	---
HEDGE	---

UTILITY SYMBOLS

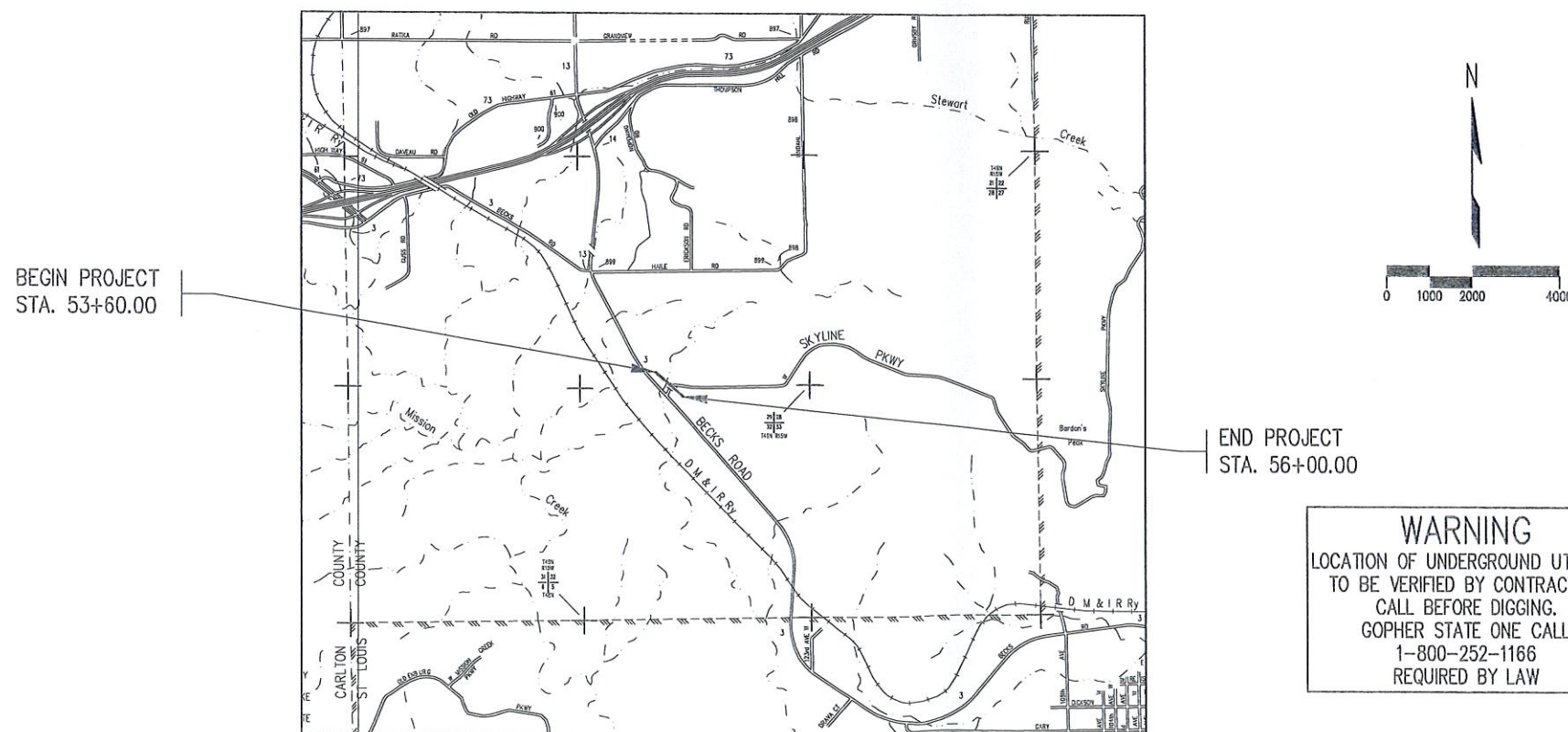
PROPERTY CORNER	○
CONTROL POINT	△
WATER METER	⊗
WELL	⊕
PEDESTAL (TELEPHONE CABLE TERMINAL)	⊗
PEDESTAL (TELEVISION CABLE TERMINAL)	⊗
PARKING METER - SINGLE	⊗
PARKING METER - DOUBLE	⊗
FIRE HYDRANT	⊗
GAS SHUT OFF VALVE	⊗
GAS VALVE	⊗
WATER SHUT OFF VALVE	⊗
WATER VALVE	⊗
EXISTING CATCH BASIN	⊗
EXISTING ELECTRIC MANHOLE	⊗
EXISTING GAS MANHOLE	⊗
EXISTING SANITARY MANHOLE	⊗
EXISTING STEAM MANHOLE	⊗
EXISTING STORM MANHOLE	⊗
EXISTING TELEPHONE MANHOLE	⊗
EXISTING TELEPHONE VAULT	⊗
EXISTING TELEVISION MANHOLE	⊗
EXISTING WATER MANHOLE	⊗
EXISTING WATER & GAS MANHOLE	⊗
PROPOSED CATCH BASIN	⊗
PROPOSED ELECTRIC MANHOLE	⊗
PROPOSED GAS MANHOLE	⊗
PROPOSED SANITARY MANHOLE	⊗
PROPOSED STEAM MANHOLE	⊗
PROPOSED STORM MANHOLE	⊗
PROPOSED TELEPHONE MANHOLE	⊗
PROPOSED TELEPHONE VAULT	⊗
PROPOSED TELEVISION MANHOLE	⊗
PROPOSED WATER MANHOLE	⊗
PROPOSED WATER & GAS MANHOLE	⊗
ANODE	⊗
ELECTRICAL BOX	⊗
ELECTRICAL VAULT	⊗
ELECTRICAL HAND HOLE (PULL BOX)	⊗
ELECTRICAL METER	⊗
ELECTRICAL PANEL	⊗
ELECTRICAL TRANSFORMER BOX	⊗
EXISTING LIGHT POLE	⊗
PROPOSED LIGHT POLE	⊗
LITE ON POWER POLE	⊗
POLE - ELECTRICAL W/TRANSFORMER	⊗
LUMIN	⊗
LUMIN2	⊗
POWER POLE	⊗
SIGNAL VAULT	⊗
TRAFFIC SIGNAL	⊗
TRAFFIC SIGNAL POLE	⊗
ANCHOR	⊗
BUSH	⊗
SWAMP - (SYMBOL)	⊗
TREE - UNIDENTIFIED (SYMBOL)	⊗
TREE - EVERGREEN	⊗
SOIL BORING	⊗
SIGN - UNIDENTIFIED (SYMBOL)	⊗
MONUMENT	⊗

CITY OF DULUTH

DEPARTMENT OF PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

CONSTRUCTION PLANS FOR: GRADING AND REMOVAL OF BRIDGE 6201 (FORMER DWP RAILROAD BRIDGE).

GEOGRAPHIC LOCATION: LOCATED ON SKYLINE PARKWAY APPROX. 200' NORTHEAST OF THE INTERSECTION WITH BECKS ROAD.



MANHOLE & CATCH BASIN INDEX			
ICB #	INPLACE CATCH BASIN	WGMH #	INPLACE WATER/GAS MANHOLE
IMH #	INPLACE DRAINAGE MANHOLE	PMH #	PROPOSED DRAINAGE MANHOLE
ISMH #	INPLACE SANITARY MANHOLE	PSMH #	PROPOSED SANITARY MANHOLE
IMH #	INPLACE TELEPHONE MANHOLE	PTMH #	PROPOSED TELEPHONE MANHOLE
WGMH #	INPLACE WATER/GAS MANHOLE	WGMH #	PROPOSED WATER/GAS MANHOLE
IMHST #	INPLACE STEAM MANHOLE	PMHST #	PROPOSED STEAM MANHOLE
IGMH #	INPLACE GAS ONLY MANHOLE	PGMH #	PROPOSED GAS ONLY MANHOLE
IPMH #	INPLACE POWER MANHOLE	PPMH #	PROPOSED POWER MANHOLE

INDEX MAP

SCALES	
PLAN	0 10'
PROFILE (HORIZONTAL)	0 10'
PROFILE (VERTICAL)	0 10'
INDEX MAP	0 2000'



PROJECT LOCATION:
CITY OF DULUTH
ST. LOUIS COUNTY
SEC 29. T49N R15W



PERFORMANCE
DRIVEN DESIGN.

21W. Superior St., Ste. 500 | Duluth, MN 55802 | 218.727.8446

LHB PROJECT. No. 150198

City of Duluth Proj. No. 1440

GOVERNING SPECIFICATIONS

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE 2014 EDITION OF THE
"MATERIALS LAB SUPPLEMENTAL SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
(AVAILABLE AT: [HTTP://WWW.DOT.STATE.MN.US/PRE-LETTING/SPEC/](http://www.dot.state.mn.us/pre-letting/spec/))

THE 2015 EDITION OF THE CITY OF DULUTH PUBLIC WORKS AND UTILITIES DEPARTMENT
STANDARD CONSTRUCTION SPECIFICATIONS SHALL APPLY.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE
MN MUTCD, INCLUDING THE FIELD MANUAL DATED "LATEST EDITION".

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL
WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED
"STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

INDEX

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES AND DETAILS
3	TRAFFIC CONTROL
4-5	EROSION CONTROL
6	PLAN & PROFILE
7-11	CROSS SECTIONS

THIS PLAN CONTAINS 11 SHEETS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME
OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

PROJECT ENGINEER

JOSEPH D. LITMAN

7/22/15 21833

PROJECT ENGINEER (TYPED OR PRINTED NAME)

DATE LIC. No.

CITY APPROVALS:

APPROVED

CHIEF ENGINEER OF TRANSPORTATION

7/27/15

APPROVED

CHIEF ENGINEER OF UTILITIES

7/27/15

APPROVED

CITY ENGINEER

7/27/15

SHEET 1 OF 11 SHEETS

TELEPHONE

CENTURY LINK

322 WEST FIRST STREET

DULUTH, MN 55802

SANITARY SEWER & STORM

DULUTH ENGINEERING DIVISION

ROOM 211, CITY HALL

DULUTH, MN 55802

TEL (218) 730-5200

WATER & GAS

DULUTH ENGINEERING DIVISION

ROOM 211, CITY HALL

DULUTH, MN 55802

TEL (218) 730-5200

CITY OF DULUTH – TRAFFIC OPERATIONS

1532 WEST MICHIGAN STREET

DULUTH, MN 55802

TEL (218) 723-3580

POWER

MINNESOTA POWER

30 WEST SUPERIOR STREET

DULUTH, MN 55802

TEL (218) 722-2641

CABLE TV

CHARTER COMMUNICATIONS Co.

302 SUPERIOR STREET

DULUTH, MN 55802

STATEMENT OF ESTIMATED QUANTITIES				
BID ITEM	SPEC. NO.	ITEM	UNIT	TOTAL QUANTITY
1	2021.501	MOBILIZATION	LUMP SUM	1
① 2	2101.511	CLEARING & GRUBBING	LUMP SUM	1
3	2105.501	COMMON EXCAVATION	CU YD	1445 (P)
4	2118.607	AGGREGATE SURFACING (CV) CLASS 5	CU YD	80 (P)
② 5	2442.501	REMOVE EXISTING BRIDGE	LUMP SUM	1
6	2563.601	TRAFFIC CONTROL	LUMP SUM	1
7	2573.502	SILT FENCE TYPE HI	LIN FT	595
③ 8	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	1283
④ 9	2575.555	TURF ESTABLISHMENT	LUMP SUM	1

STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.	
PLATE NO.	DESCRIPTION
80001	STANDARD BARRICADES

WARNING
LOCATION OF UNDERGROUND UTILITIES
TO BE VERIFIED BY CONTRACTOR.
CALL BEFORE DIGGING.
GOPHER STATE ONE CALL
1-800-252-1166
REQUIRED BY LAW

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

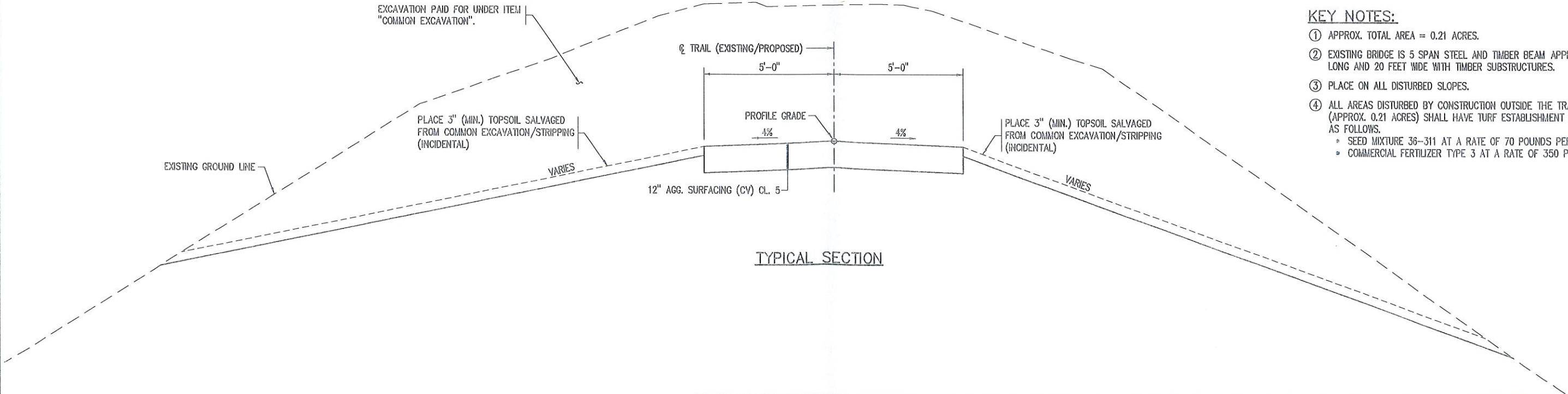
PROJECT CONTROL					
CONTROL POINT	LOCATION	NORTHING	EASTING	ELEVATION	DESC.
CP 1	REBAR, STA. 54+67.85', 54.71' LT.	398963.332	2832520.305	1027.242	REBAR
CP 2	REBAR, STA. 55+25.91', 187.13' RT.	399196.969	2832605.703	1043.691	REBAR

GENERAL NOTES:

- WITHIN THE PLAN WHEREVER THE WORD INCIDENTAL IS USED IT SHALL MEAN NO DIRECT PAYMENT WILL BE MADE FOR THAT ITEM.
- (P) INDICATES PLAN QUANTITY.

KEY NOTES:

- ① APPROX. TOTAL AREA = 0.21 ACRES.
- ② EXISTING BRIDGE IS 5 SPAN STEEL AND TIMBER BEAM APPROX. 92 FEET LONG AND 20 FEET WIDE WITH TIMBER SUBSTRUCTURES.
- ③ PLACE ON ALL DISTURBED SLOPES.
- ④ ALL AREAS DISTURBED BY CONSTRUCTION OUTSIDE THE TRAIL SURFACING (APPROX. 0.21 ACRES) SHALL HAVE TURF ESTABLISHMENT PERFORMED AS FOLLOWS.
 - SEED MIXTURE 36-311 AT A RATE OF 70 POUNDS PER ACRE
 - COMMERCIAL FERTILIZER TYPE 3 AT A RATE OF 350 POUNDS PER ACRE



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
NAME: *Joseph D. Litman* LIC. NO. 21833 DATE 07/22/2015
JOSEPH D. LITMAN

CITY OF DULUTH

STATEMENT OF ESTIMATED QUANTITIES

Sheet No. 02 of 11 Sheets

TRAFFIC CONTROL NOTES

- ① ALL SIGNING INDICATED ON THIS TRAFFIC CONTROL PLAN, EXCEPT THOSE SIGNS WHICH ARE INPLACE, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL APPROPRIATE SIGNING, INCLUDING INPLACE SIGNS, SHALL BE MAINTAINED BY THE CONTRACTOR DURING THE LIFE OF THE CONTRACT. EXISTING STOP SIGNS SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT.
- ② ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO, AND BE PLACED IN ACCORDANCE WITH, THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MMUTCD) INCLUDING PART VI AND THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED "CURRENT", THE MINNESOTA STANDARD SIGNS MANUALS PARTS I, II, AND III AND THE APPROPRIATE MATERIAL SPECIFICATIONS.
- ③ THE CONTRACTOR SHALL RECEIVE COMPENSATION FOR ALL WORK DESCRIBED HEREIN ON THE BASIS OF A LUMP SUM PAYMENT FOR ITEM TRAFFIC CONTROL (2563.601).
- ④ THE CONTRACTOR SHALL PLACE ADEQUATE PLASTIC DRUMS, WARNING SIGNS, AND BARRICADES WITHIN THE CONSTRUCTION ZONE TO PROTECT VEHICULAR TRAFFIC AND PEDESTRIAN TRAFFIC FROM CONSTRUCTION OPERATIONS. ADDITIONAL SIGNING MAY INCLUDE, BUT IS NOT LIMITED TO BUMP, DIP, LOOSE GRAVEL, ETC. THE NUMBER AND PLACEMENT OF TRAFFIC CONTROL DEVICES SHALL BE DETERMINED BY THE SEQUENCE OF THE CONTRACTOR'S OPERATIONS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.
- ⑤ ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED OR COVERED AS SOON AS THEY ARE NO LONGER REQUIRED OR APPROPRIATE.
- ⑥ THE INITIAL CONSTRUCTION SIGNING AND DETOUR SIGNAGE SHALL BE ERECTED PRIOR TO CONSTRUCTION OPERATIONS.

- ⑦ TYPE A (LOW INTENSITY) FLASHERS SHALL BE FURNISHED, INSTALLED, AND MAINTAINED ON TYPE III BARRICADES AND ADVANCED WARNING SIGNS WHEN USED AT NIGHT, OR TO IDENTIFY HAZARDS, AND AS DETAILED IN THIS TRAFFIC CONTROL PLAN. ADDITIONAL FLASHERS SHALL BE FURNISHED, INSTALLED, AND MAINTAINED ON SIGNS, BARRICADES, AND CHANNELIZERS AS NEEDED OR AS DIRECTED BY THE ENGINEER FOR TRAFFIC CONTROL THROUGH WORK ZONES WITHIN THE PROJECT LIMITS.
- ⑧ FLAGGING SHALL BE REQUIRED WHEN WORK IS AT THE EDGE OF THE DRIVING LANE TO PROTECT TRAFFIC FROM EXCAVATION AND PAVING OPERATIONS. FLAGGING SHALL BE IN ACCORDANCE WITH THE PERTINENT LAYOUTS SHOWN IN PART VI OF THE MMUTCD, INCLUDING THE FIELD MANUAL DATED "CURRENT". ALL SUCH WORK RELATED TO FLAGGING, INCLUDING FLAG PERSONS, SHALL BE CONSTRUED TO BE INCLUDED IN THE LUMP SUM PAYMENT FOR TRAFFIC CONTROL (2563.601).
- ⑨ "ROAD CLOSED AHEAD" SIGNS SHALL BE MOUNTED APPROXIMATELY 750' IN ADVANCE OF THE CONSTRUCTION AND THE NEAREST INTERSECTION AND SHALL HAVE A TYPE "A" LOW INTENSITY FLASHING AMBER WARNING LIGHT MOUNTED ON THEM.

KEY NOTES:

- ① POSTS, WEIGHTS AND HARDWARE REQUIRED FOR SIGN PLACEMENT ARE INCIDENTAL ITEMS.
- ② ALL SIGN PANEL DIMENSIONS ARE IN INCHES.
- ③ LABELED 5.7 MILES.

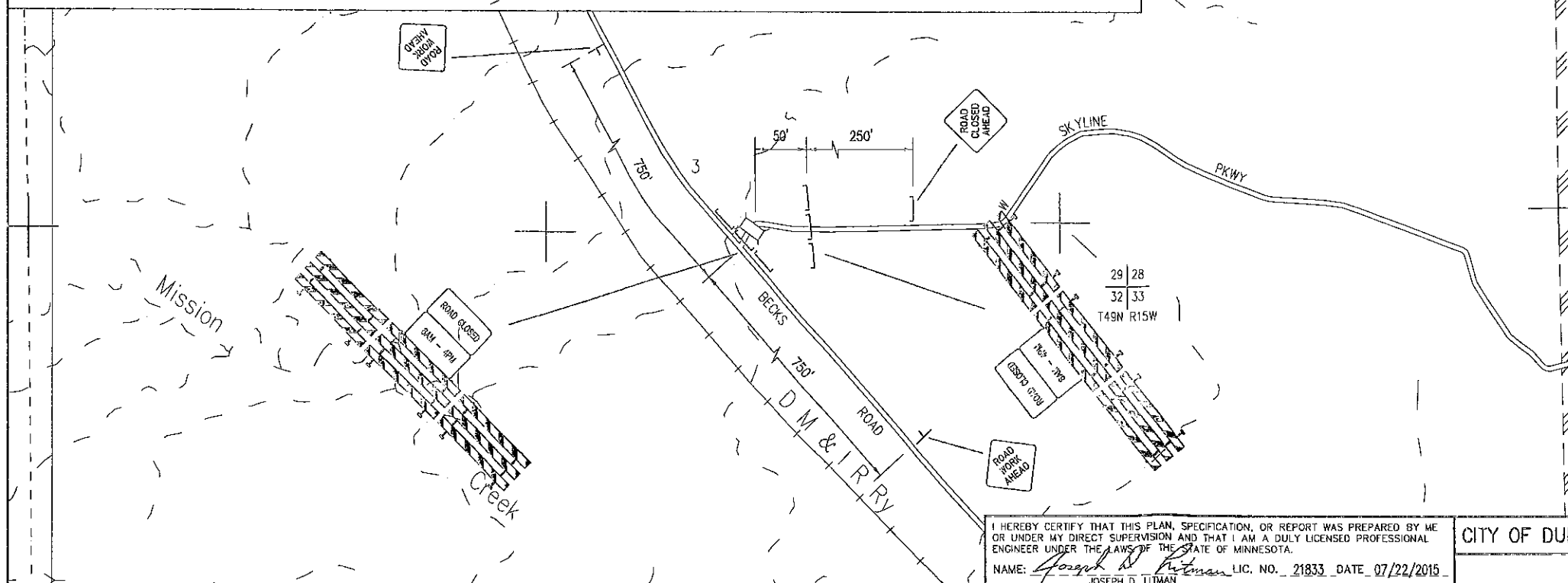
LEGEND

- DENOTES TYPE III BARRICADE
- + DENOTES SIGN

TRAFFIC - BILL OF MATERIALS ①

THE FOLLOWING ITEMS ARE INCLUDED AND PAID FOR UNDER SPEC. 2563.601 TRAFFIC CONTROL

SIGN NO.	DEVICE	SIZE ②	NO. REQ'D.	NOTES
	NO ACCESS TO BECKS ROAD	48"x30" BLK. ON WHITE	1	
	8AM - 4PM	36"x24" BLK. ON WHITE	3	
R11-2	ROAD CLOSED	48"x30" BLK. ON WHITE	2	
R11-3A	③ ROAD CLOSED 5.7 MILES AHEAD LOCAL WHITE DAY	72"x30" BLK. ON WHITE	1	
W20-1	ROAD WORK AHEAD	48"x48" BLK. ON ORANGE	2	
W20-3	ROAD CLOSED AHEAD	48"x48" BLK. ON ORANGE	1	
TYPE III BARRICADE		8' ORANGE & WHITE	2	
TYPE III BARRICADE		8' ORANGE & WHITE	6	



TRAFFIC CONTROL SEQUENCING NOTES:

- ROAD CLOSURE WILL BE PERMITTED TO OCCUR FROM 8AM TO 4PM ONLY AND SHALL BE LIMITED TO THIS TIME PERIOD FOR NO MORE THAN 3 DAYS. ALL SIGNS SHALL BE TURNED/REMOVED FROM THE ROADWAY LIMITS AND THE ROADWAY FULLY OPENED DURING THE NON-CLOSURE HOURS AT THE END OF EACH WORK DAY.
- DURING ALL OTHER PERIODS OF WORK TRAFFIC SHALL BE MAINTAINED THROUGH THE WORK AREA WITH ALL NECESSARY SIGNING OR FLAGGING IN ACCORDANCE WITH THE MMUTCD AND FIELD MANUAL FURNISHED.
- NO ADDITIONAL PAYMENT WILL BE MADE FOR SEQUENCING, REMOVAL, OR RE-SETTING OF SIGNS OR FOR FLAGGING ETC. ALL WORK AND MATERIALS NECESSARY SHALL BE INCLUDED IN THE SINGLE LUMP SUM FOR ITEM "TRAFFIC CONTROL".

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NAME: Joseph D. Litman LIC. NO. 21833 DATE 07/22/2015
JOSEPH D. LITMAN

CITY OF DULUTH

TRAFFIC CONTROL

Sheet No. 03 of 11 Sheets

1. GENERAL REQUIREMENTS FOR CONSTRUCTION ACTIVITY

A. EROSION PREVENTION: THE CONTRACTOR MUST PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES THAT MINIMIZE EROSION SO THAT INSPECTION AND MAINTENANCE REQUIREMENTS OF THE GENERAL STORMWATER PERMIT ARE MET. COMMON EROSION PREVENTION PRACTICES INCLUDE:

- 1) MARKING AND DELINEATING AREAS OF THE SITE NOT TO BE DISTURBED (WITH FLAGS, STAKES, SIGNS, SILT FENCE, ETC.).
- 2) STABILIZING ALL EXPOSED SOIL AREAS AS SOON AS POSSIBLE, BUT IN NO CASE LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- 3) STABILIZE THE LAST 200 LINEAL FEET OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE WITHIN 24 HOURS AFTER CONNECTING TO RECEIVING SURFACE WATER OR STORM SEWER INLET.
- 4) PROVIDE TEMPORARY OR PERMANENT ENERGY DISSIPATION TO PIPE OUTLETS WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER.

B. SEDIMENT CONTROL: THE CONTRACTOR MUST PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES THAT MINIMIZE SEDIMENT FROM ENTERING SURFACE WATERS, INCLUDING BUT NOT LIMITED TO: CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS. COMMON SEDIMENT CONTROL PRACTICES INCLUDE:

- 1) DO NOT ALLOW ANY UNBROKEN SLOPE LENGTH GREATER THAN 75 FEET FOR 3:1 (H:V) SLOPES OR STEEPER IN ORDER TO MAINTAIN SHEET FLOW AND MINIMIZE RILLS AND GULLIES.
- 2) ALL SEDIMENT CONTROL BMPs MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES CAN BEGIN AND SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ESTABLISHED.
- 3) THE TIMING FOR SEDIMENT CONTROL BMPs MAY BE ADJUSTED TO ACCOMMODATE SHORT-TERM CONSTRUCTION ACTIVITIES, SUCH AS CLEARING AND GRUBBING OR PASSAGE OF VEHICLES, AND MUST BE COMPLETED AS QUICKLY AS POSSIBLE. SEDIMENT CONTROL BMPs MUST BE INSTALLED IMMEDIATELY AFTER SHORT-TERM CONSTRUCTION IS COMPLETE, OR BEFORE THE NEXT PRECIPITATION EVENT IF THE ACTIVITY IS NOT COMPLETE.
- 4) PROTECT ALL STORM DRAIN INLETS WITH APPROPRIATE BMPs DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. INLET PROTECTION MAY ONLY BE REMOVED EARLIER IF SPECIFIC SAFETY CONCERNS (STREET FLOODING/FREEZING) HAVE BEEN BROUGHT FORTH IN WRITING BY JURISDICTIONAL AUTHORITY.
- 5) TEMPORARY STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN ANY SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS OR DITCHES.
- 6) ALL VEHICLE TRACKING OF SEDIMENT FROM THE CONSTRUCTION SITE, OR ONTO STREETS WITHIN THE SITE, MUST BE MINIMIZED BY BMPs SUCH AS STONE PADS, CONCRETE OR STEEL WASH RACKS, OR EQUIVALENT SYSTEMS. STREET SWEEPING MUST BE PERFORMED IF BMPs ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREETS / ROADWAYS.

C. DEWATERING AND BASIN DRAINING: THE CONTRACTOR MUST ENSURE THAT ALL WATER FROM DEWATERING OR BASIN DRAINING ACTIVITIES ARE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR DOWNSLOPE PROPERTIES, OR INUNDATION IN WETLANDS CAUSING SIGNIFICANT ADVERSE IMPACTS TO THE WETLANDS. ANY TURBID OR SEDIMENT LADEN DISCHARGE WATER MUST BE ADEQUATELY TREATED BY DISCHARGING TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE PROJECT SITE WHENEVER POSSIBLE, OR TREATED WITH APPROPRIATE BMPs IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENT BASIN. THE CONTRACTOR MUST VISUALLY CHECK THE TREATED STORMWATER PRIOR TO DISCHARGING TO RECEIVING WATERS TO ENSURE ADEQUATE TREATMENT IS BEING MET.

D. INSPECTIONS AND MAINTENANCE: THE CONTRACTOR MUST ROUTINELY INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS DURING CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES OVER 24 HOURS. INSPECTION OF AREAS WITH PERMANENT COVER MAY BE REDUCED TO ONCE PER MONTH. THE CONTRACTOR SHALL RECORD IN WRITING ALL INSPECTION AND MAINTENANCE ACTIVITY ON FORMS WITH INFORMATION REQUIRED BY PART IV.E.2 OF THE GENERAL STORMWATER PERMIT. ALL NONFUNCTIONAL BMPs MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPs WITHIN 24 HOURS AFTER DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. COMMON ROUTINE MAINTENANCE ACTIVITIES INCLUDE:

- 1) ALL SILT FENCE MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE FENCE HEIGHT WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
- 2) DRAIN ALL TEMPORARY AND PERMANENT SEDIMENTATION BASINS AND REMOVE SEDIMENT WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/4 THE STORAGE VOLUME WITHIN 72 HOURS OF DISCOVERY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
- 3) REMOVE ALL DEPOSITED SEDIMENT FROM SURFACE WATERS AND STORMWATER CONVEYANCE SYSTEMS (DITCHES, CURB AND GUTTERS, CATCH BASINS, ETC.) AND RESTABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL WITHIN 7 DAYS OF DISCOVERY OR AFTER OBTAINING PERMISSION FROM JURISDICTIONAL AUTHORITIES.
- 4) REMOVE ANY TRACKED SEDIMENT FROM ALL PAVED SURFACES WITHIN 24 HOURS AFTER DISCOVERY OR SOONER AS REQUIRED FOR PERMIT COMPLIANCE.
- 5) REMOVE ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS AND SAFETY HAZARDS.
- 6) OPERATE, MAINTAIN, AND INSPECT ANY TEMPORARY OR PERMANENT WATER QUALITY MANAGEMENT BMPs TO ENSURE ADEQUATE TREATMENT IS BEING MET.

E. POLLUTION PREVENTION MANAGEMENT MEASURES: THE CONTRACTOR MUST MANAGE AND IMPLEMENT POLLUTION PREVENTION MEASURES TO PREVENT AIR, LAND, AND WATER CONTAMINATION AND MEET REGULARY COMPLIANCE. COMMON POLLUTION PREVENTION MANAGEMENT MEASURES INCLUDE:

- 1) COLLECT SOLID WASTE (SEDIMENT, CONSTRUCTION AND DEMOLITION DEBRIS, ASPHALT/CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, ETC) AND DISPOSE IN COMPLIANCE WITH MPCA REQUIREMENTS.
- 2) STORE HAZARDOUS MATERIALS (FUEL, PAINT, ETC.) AND PROVIDE SECONDARY CONTAINMENT TO PREVENT SPILLS, LEAKS, AND OTHER DISCHARGE. RESTRICT ACCESS TO STORAGE AREAS AND DISPOSE OF HAZARDOUS WASTE IN COMPLIANCE WITH MPCA REQUIREMENTS.
- 3) LIMIT EXTERNAL WASHING OF TRUCKS AND CONSTRUCTION VEHICLES TO A DEFINED AREA OF SITE. CONTAIN RUNOFF AND PROPERLY DISPOSE OF WASTE. NO ENGINE DEGREASING IS ALLOWED ON SITE.
- 4) ALL LIQUID AND SOLID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER ONSITE. NO LIQUID OR SOLID WASTE MUST CONTACT THE GROUND AND NO RUNOFF IS ALLOWED FROM THE CONCRETE WASHOUT OPERATIONS OR AREA. ALL WASTE MUST BE PROPERLY DISPOSED IN COMPLIANCE WITH MPCA REGULATIONS. A SIGN MUST BE INSTALLED NEAR EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

F. FINAL STABILIZATION: THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING FINAL STABILIZATION FOR THE SITE AS DESCRIBED IN PART IV.G OF THE GENERAL STORMWATER PERMIT. SPECIFIC CONDITIONS REQUIRED FOR FINAL STABILIZATION INCLUDE:

- 1) ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL SOILS ARE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OVER THE ENTIRE PERVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSION CONDITIONS. ALL TEMPORARY SYNTHETIC AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPs MUST BE LEFT IN-PLACE UNTIL RESTORATION GOAL IS MET - 70% DENSITY.
- 2) ALL PERMANENT STORMWATER TREATMENT SYSTEMS ARE OPERATIONAL AND ALL SEDIMENT IS REMOVED FROM TEMPORARY AND PERMANENT SEDIMENTATION BASINS AND CONVEYANCE SYSTEMS.
- 3) BMPs DESIGNED TO DECOMPOSE MAY BE LEFT IN PLACE.

2. EROSION CONTROL RESPONSIBILITIES

A. THE CONTRACTOR IS RESPONSIBLE FOR OVERSEEING THE EROSION CONTROL IMPLEMENTATION AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs BEFORE AND DURING CONSTRUCTION. THE FOLLOWING PERSON IS DESIGNATED TO PERFORM THESE DUTIES ON BEHALF OF THE CONTRACTOR AND IS TRAINED AND CERTIFIED TO INSPECT AND INSTALL BMPs AND/OR MANAGE SITES COVERED UNDER THE GENERAL STORMWATER PERMIT:

B. THE OWNER IS RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF PERMANENT STORMWATER MANAGEMENT SYSTEM. THE FOLLOWING PERSON IS DESIGNATED TO PERFORM THESE DUTIES:

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C. THE GENERAL CONTRACTOR IS IN CHARGE OF ALL EROSION CONTROL IMPLEMENTATION ON THE SITE AND WILL BE ACCOUNTABLE FOR ALL OTHER CONTRACTORS WORKING ON SITE AND THEIR COMPLIANCE WITH GENERAL STORMWATER PERMIT AND SWPPP REQUIREMENTS.

3. REGULATORY AGENCIES AND PERMITS

A. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF ALL REGULATORY AGENCIES AND PERMITS HAVING JURISDICTION DURING CONSTRUCTION ACTIVITIES. IN ADDITION TO THE MPCA AND GENERAL STORMWATER PERMIT, THE FOLLOWING REGULATORS AND PERMITS ARE KNOWN TO HAVE SITE JURISDICTION:

- 1) CITY OF DULUTH - EROSION CONTROL PERMIT

4. GENERAL NATURE OF CONSTRUCTION ACTIVITY DESCRIPTION

A. THE PROJECT INVOLVES THE REMOVAL OF THE FORMER DWP RAILROAD BRIDGE AND ASSOCIATED TRAIL GRADING WORK.

TOTAL DISTURBED AREA = 0.24 ACRES.

1. CLEARING & GRUBBING OF EXISTING VEGETATION.
2. BRIDGE REMOVAL.
3. SLOPE AND TRAIL GRADING.
4. EROSION CONTROL & TURF ESTABLISHMENT.

5. IMPERVIOUS SURFACE AREAS (TO NEAREST 1/4 ACRE)

- A. PRE-CONSTRUCTION CONDITIONS: 0.00 ACRES
- B. POST-CONSTRUCTION CONDITIONS: 0.00 ACRES
- C. NET DIFFERENCE: 0.00 ACRES

6. POTENTIAL FOR SEDIMENT AND POLLUTANTS DISCHARGES FROM THE SITE

- A. SEDIMENT FROM OVERLAND (SHEET) FLOW FROM THE SITE WILL BE CONTAINED BY A PERIMETER CONTROL OF SILT FENCE.
- B. SEDIMENT AND TURBIDITY FROM DEWATERING ACTIVITIES SHALL BE TREATED BY MEANS OF A PORTABLE SEDIMENT CONTAINMENT SYSTEM OR OTHER ENGINEER APPROVED METHOD. THE CONTRACTOR IS RESPONSIBLE TO MEET THE STORMWATER DISCHARGE REQUIREMENTS OF THE CITY/COUNTY, AND OTHER AGENCIES WITH REGULATING AUTHORITY. AT A MINIMUM, STORMWATER QUALITY FROM DEWATERING ACTIVITIES AND OTHER DISCHARGES FROM THE SITE MUST MEET THE TURBIDITY AND SEDIMENT LEVELS OF THE RECEIVING SURFACE WATERS.
- C. LIQUID AND SOLID WASTE FROM CONCRETE OPERATIONS SHALL BE TREATED BY DESIGNATED CONCRETE WASHOUT STATIONS.
- D. MAJOR DRAINAGE WAY RUNS THROUGH PROJECT LIMITS. CONTRACTOR SHALL BE PREPARED FOR LARGE RUNOFF VOLUMES & FLOWS FROM RAIN EVENTS.

7. DRAWING REFERENCES

A. LOCATION AND TYPE OF EROSION PREVENTION AND SEDIMENT CONTROL BMPs

- 1) TEMPORARY BMPs: SEE SHEETS 5
- 2) PERMANENT BMPs: SEE SHEET 5
- B. SITE MAPS
- 1) EXISTING GRADES: SEE PLAN SHEETS
- 2) FINAL GRADES: SEE PLAN SHEETS
- 3) DRAINAGE PATTERNS: SEE SHEETS
- 4) IMPERVIOUS SURFACING AND SOIL TYPES: SEE PLAN AND PROFILE SHEETS
- 5) LOCATION OF AREAS NOT TO BE DISTURBED: SEE PLAN AND PROFILE SHEETS

8. TIMING/SCHEDULE OF BMP INSTALLATION FOR EROSION PREVENTION AND SEDIMENT CONTROL

A. PRIOR TO LAND DISTURBANCE ACTIVITIES:

- 1) INSTALL SILT FENCE AT SITE PERIMETERS AND AROUND AREAS NOT TO BE DISTURBED.

B. DURING CONSTRUCTION ACTIVITIES:

- 1) INSTALL SILT FENCE AROUND STOCKPILES.
- 2) INSTALL AND MAINTAIN PORTABLE SEDIMENT CONTAINMENT SYSTEMS FOR TREATING GROUNDWATER FROM DEWATERING OPERATIONS.
- 3) INSTALL EROSION CONTROL BLANKETS AND SEED/FERTILIZER WHEN LAND DISTURBING ACTIVITIES ARE COMPLETE.

- 4) INSPECT AND MAINTAIN ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs, INCLUDING REMOVING SEDIMENT DEPOSITS AND SWEEPING STREETS.

- 5) ALL DEMOLITION AND REMOVAL OPERATIONS SHALL BE PERFORMED IN A MANNER WHICH CONTAINS ALL DEBRIS FROM ENTERING THE STREAM. IF REMOVAL OPERATIONS RESULT IN DEBRIS ENTERING THE STREAM REMOVAL OPERATIONS SHALL BE SUSPENDED AND METHODS CORRECTED PRIOR TO RESUMING. ANY DEBRIS WHICH DOES ENTER THE STREAM SHALL BE REMOVED.

C. UPON COMPLETION OF LAND DISTURBANCE ACTIVITIES:

- 1) ESTABLISH PERMANENT COVER IN ALL AREAS OF THE SITE AND MAINTAIN UNTIL FINAL STABILIZATION.
- 2) UPON FINAL STABILIZATION, REMOVE ALL TEMPORARY BMPs (STABILIZED CONSTRUCTION EXITS, INLET PROTECTION, SILT FENCE, CONCRETE WASHOUT STATIONS, PORTABLE SEDIMENT CONTAINMENT SYSTEMS) AND REMOVE ANY SEDIMENT THAT HAS ACCUMULATED IN TEMPORARY BMPs, CONVEYANCE SYSTEMS, SEDIMENT BASINS, AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

9. PROCEDURES FOR ESTABLISHING ADDITIONAL BMPs FOR SITE CONDITIONS DURING CONSTRUCTION

A. IF ANY DOWN GRADIENT TREATMENT SYSTEM IS OVERLOADED, ADDITIONAL UPGRADIENT SEDIMENT CONTROL OR REDUNDANT BMPs MUST BE INSTALLED BY THE CONTRACTOR TO ELIMINATE THE OVERLOADING CONDITION. CONTRACTOR SHALL BE PROACTIVE REGARDING EROSION & SEDIMENT CONTROL MEASURES.

10. METHODS OF FINAL STABILIZATION

A. FINAL STABILIZATION WILL BE ACCOMPLISHED BY VEGETATIVE GROUND COVERS (SODDING AND SEEDING/MULCHING). SPECIFIC CONSTRUCTION METHODS ARE DESCRIBED IN THE PLANS AND SPECIFICATIONS.

11. PERMANENT STORMWATER MANAGEMENT SYSTEMS (NOT REQUIRED)

A. THE PROJECT DOES NOT EXCEED THE THRESHOLD OF 1 ACRE OF NEW IMPERVIOUS THEREFORE NO PERMANENT STORMWATER MANAGEMENT SYSTEM IS REQUIRED.

12. STANDARDS SPECIFICATIONS FOR CONSTRUCTION

A. UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS, ALL MATERIAL AND CONSTRUCTION REQUIREMENTS FOR TEMPORARY SEDIMENT CONTROL AND EROSION PREVENTION SHALL BE IN ACCORDANCE WITH THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE 2014 EDITION OF THE "MATERIALS LAB SUPPLEMENTAL SPECIFICATIONS FOR CONSTRUCTION" AND AS MODIFIED BY THE PROJECT SPECIAL PROVISIONS.

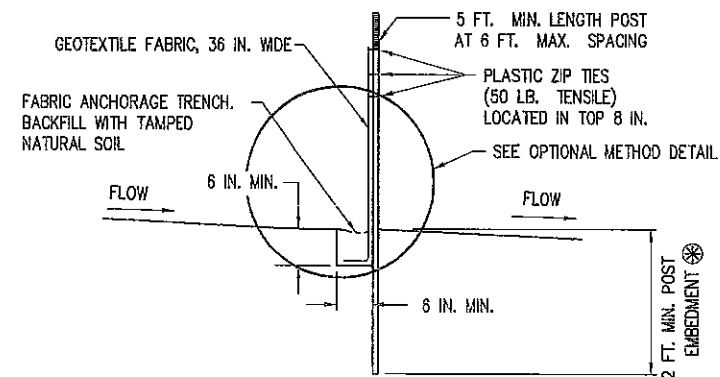
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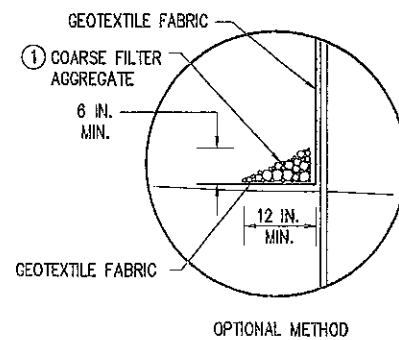
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EROSION CONTROL NOTES

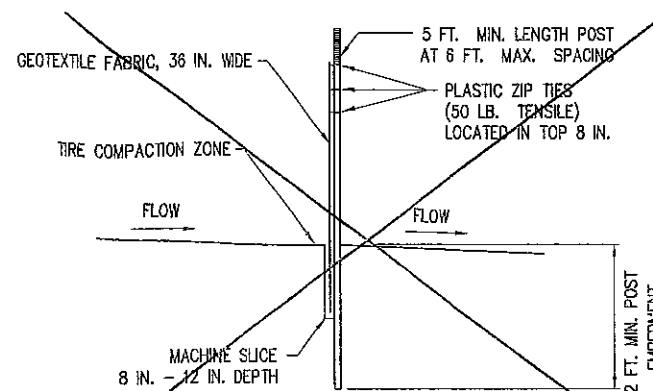
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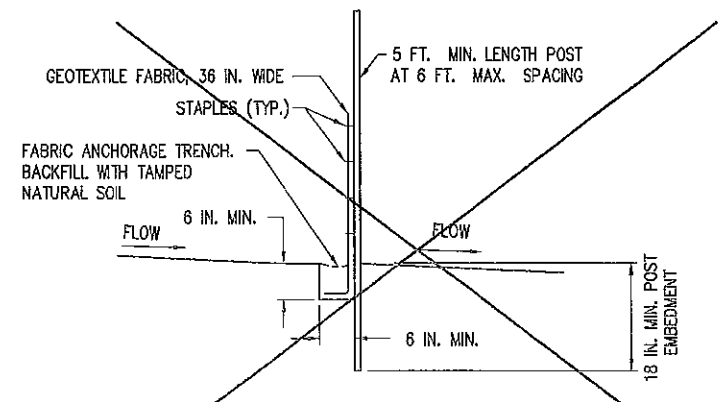
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(HAND INSTALLED)



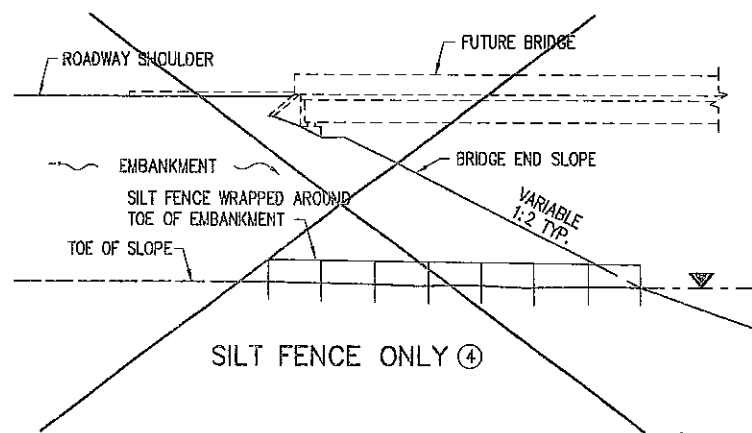
OPTIONAL METHOD



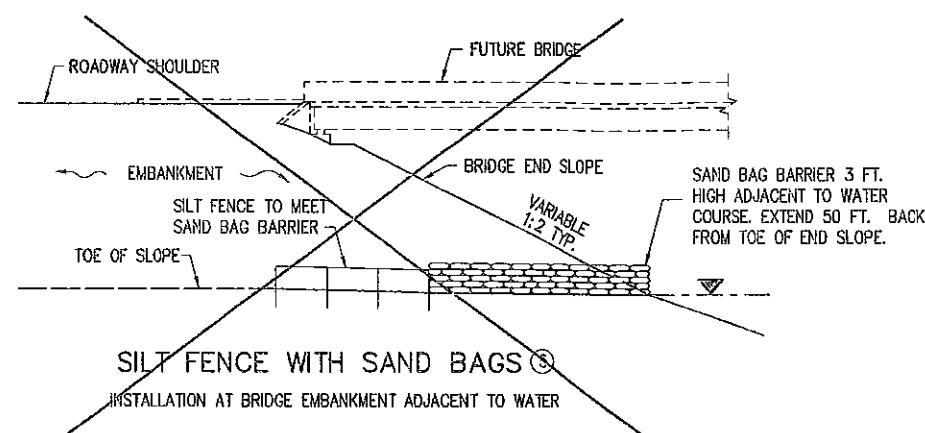
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(MACHINE SLICED)



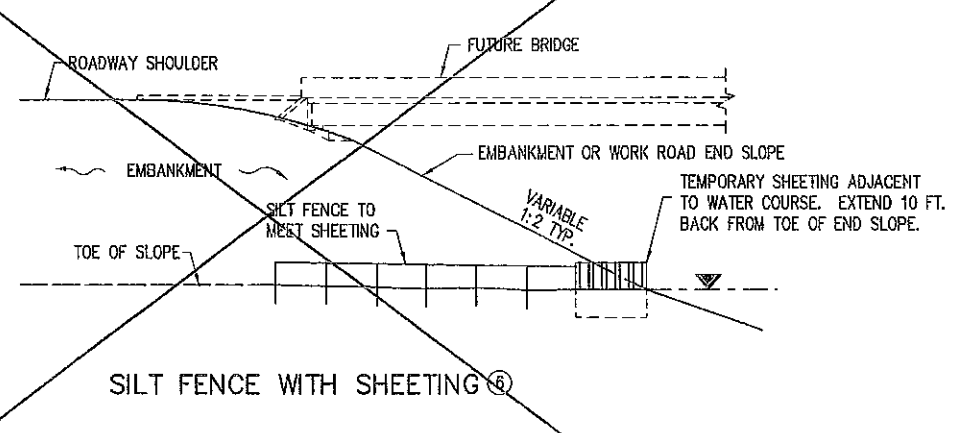
SILT FENCE TYPE PA ③
(PREASSEMBLED)



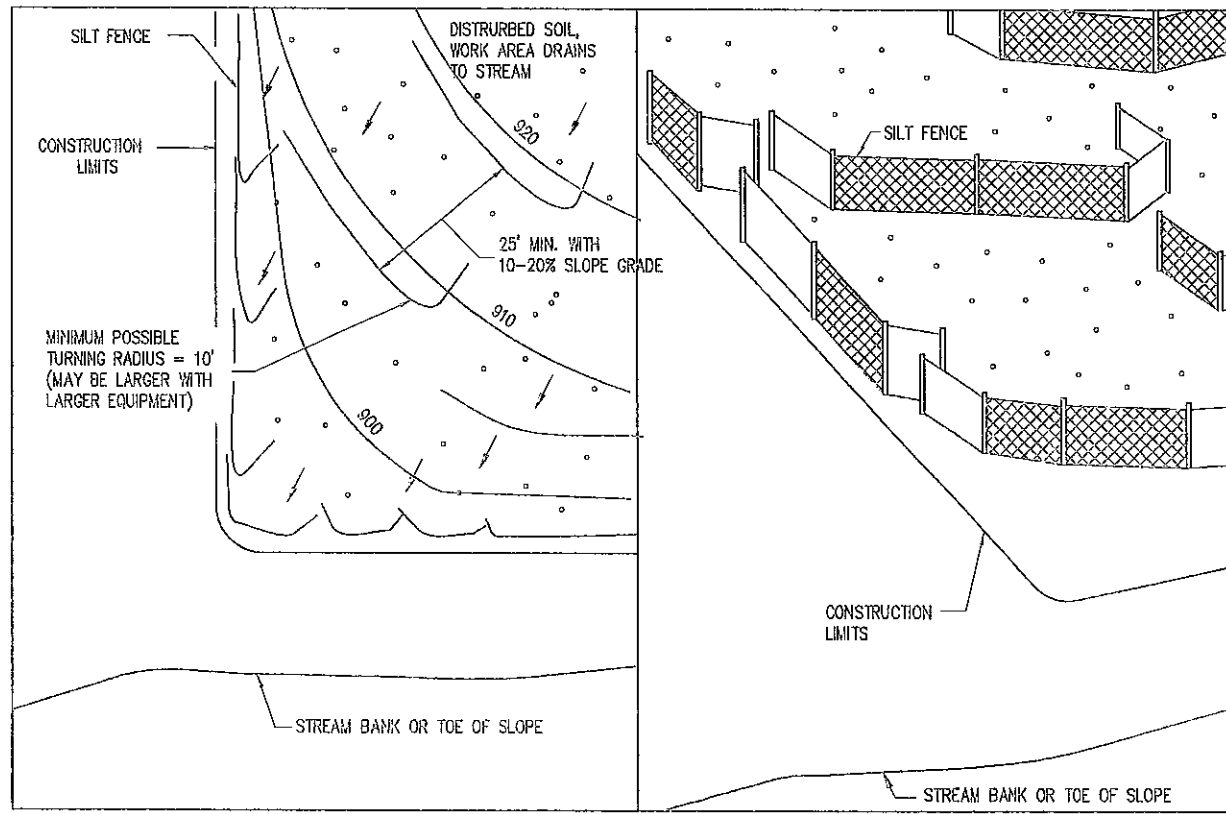
SILT FENCE ONLY ④



SILT FENCE WITH SAND BAGS ⑤
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



SILT FENCE WITH SHEETING ⑥

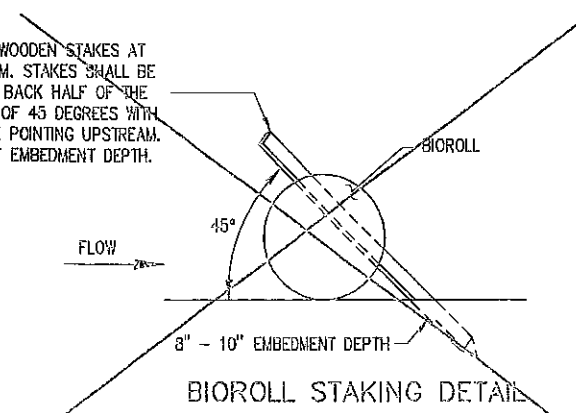


PLAN VIEW

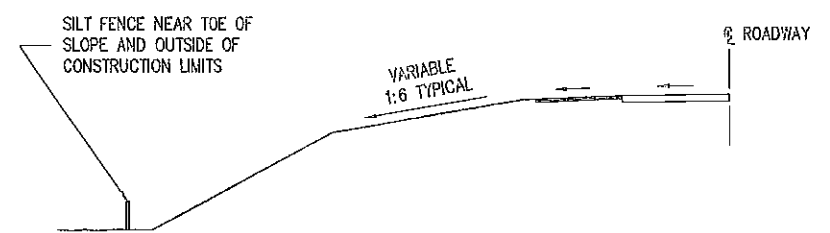
PERSPECTIVE VIEW

J-HOOK INSTALLATION

1" X 2" X 18" LONG WOODEN STAKES AT 1'-0" SPACING MAXIMUM. STAKES SHALL BE DRIVEN THROUGH THE BACK HALF OF THE BIOROLL AT AN ANGLE OF 45 DEGREES WITH THE TOP OF THE STAKE POINTING UPSTREAM. PROVIDE 8" TO 10" OF EMBEDMENT DEPTH.



BIOROLL STAKING DETAIL



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

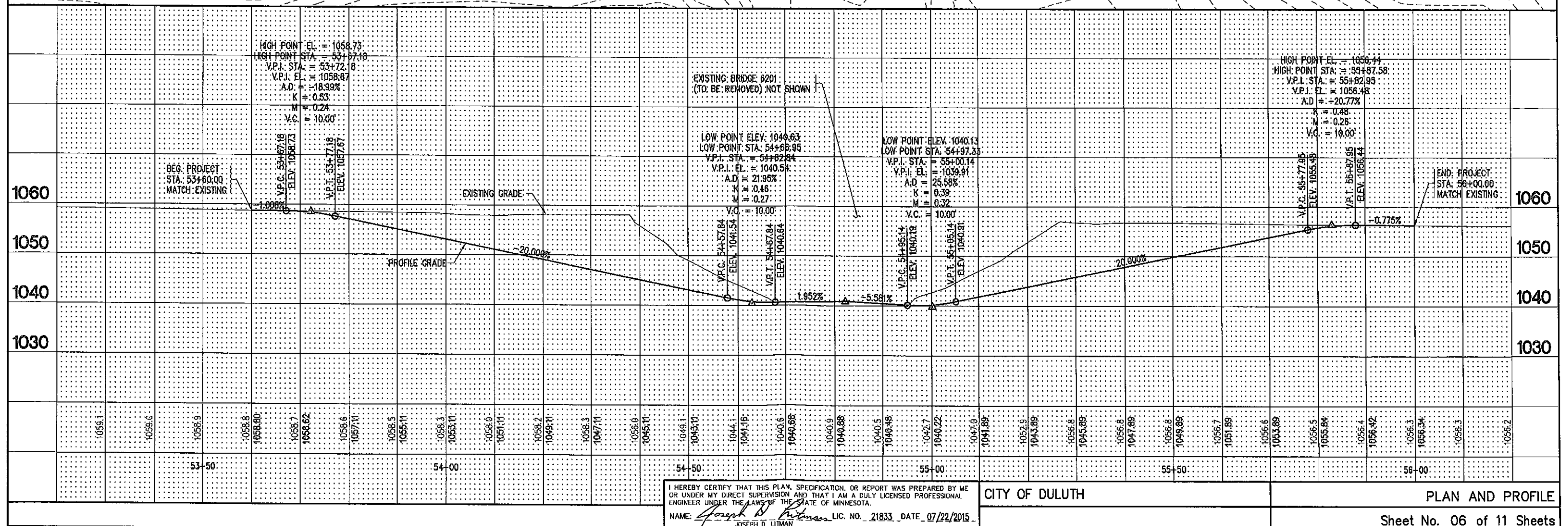
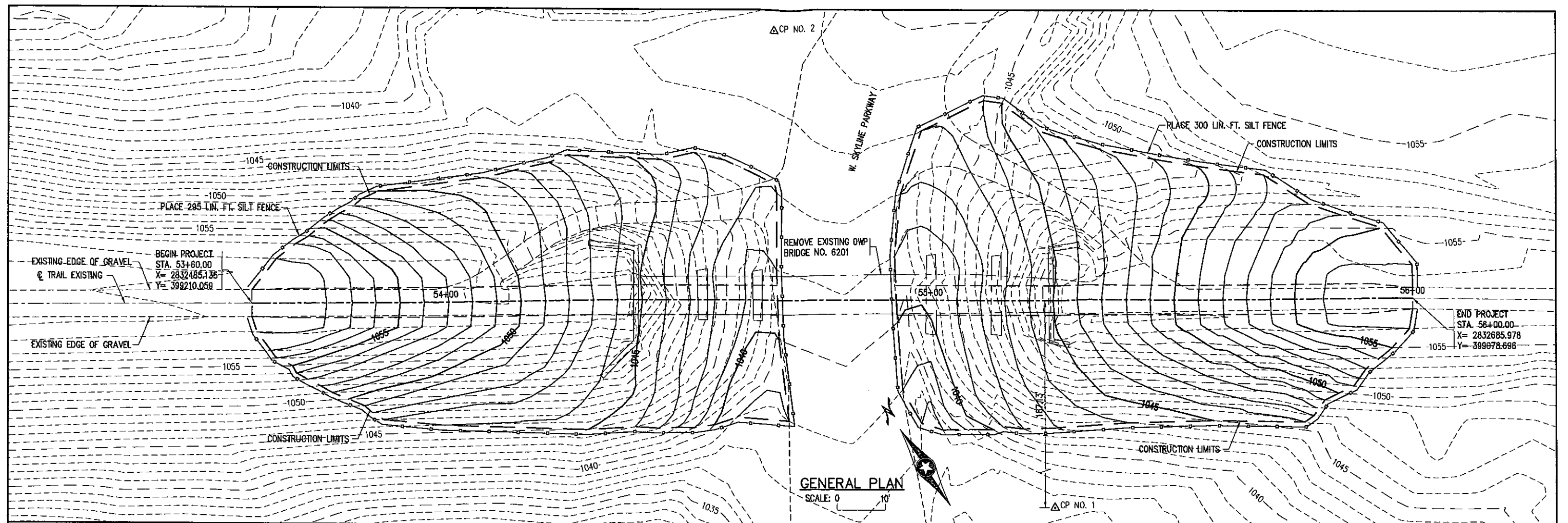
- ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
- ② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- ③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.
- ④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1/2 ACRE.
- ⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.
- ⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

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EROSION CONTROL DETAILS

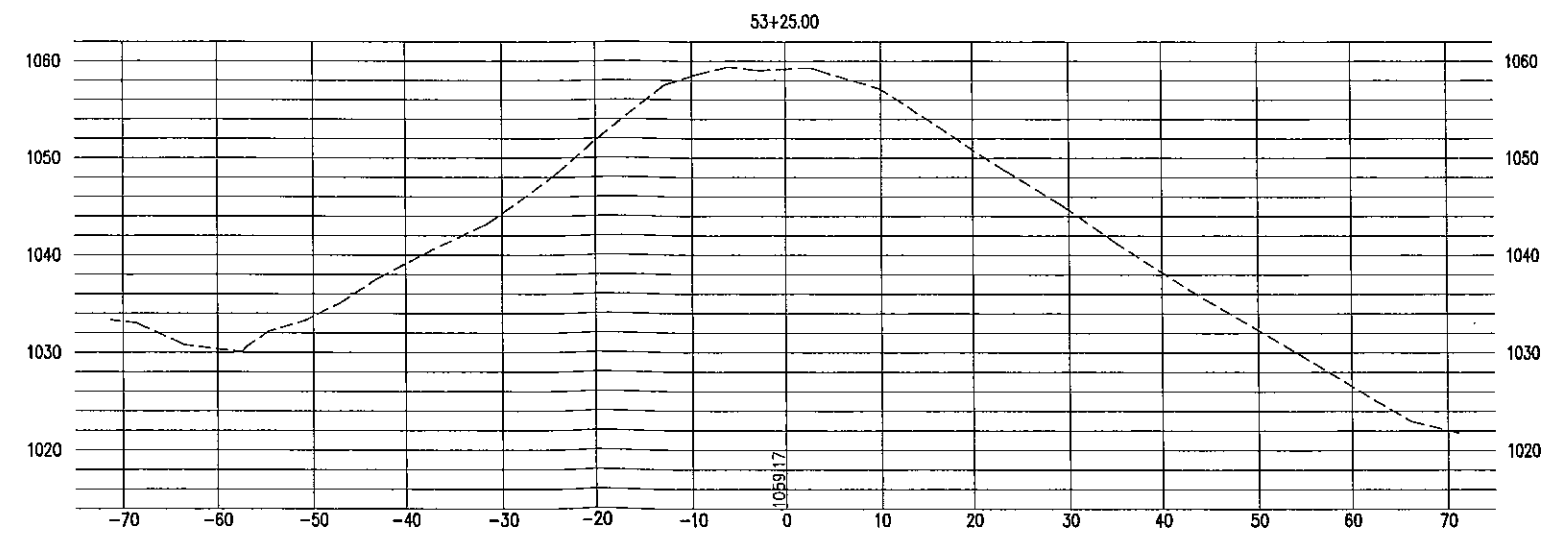
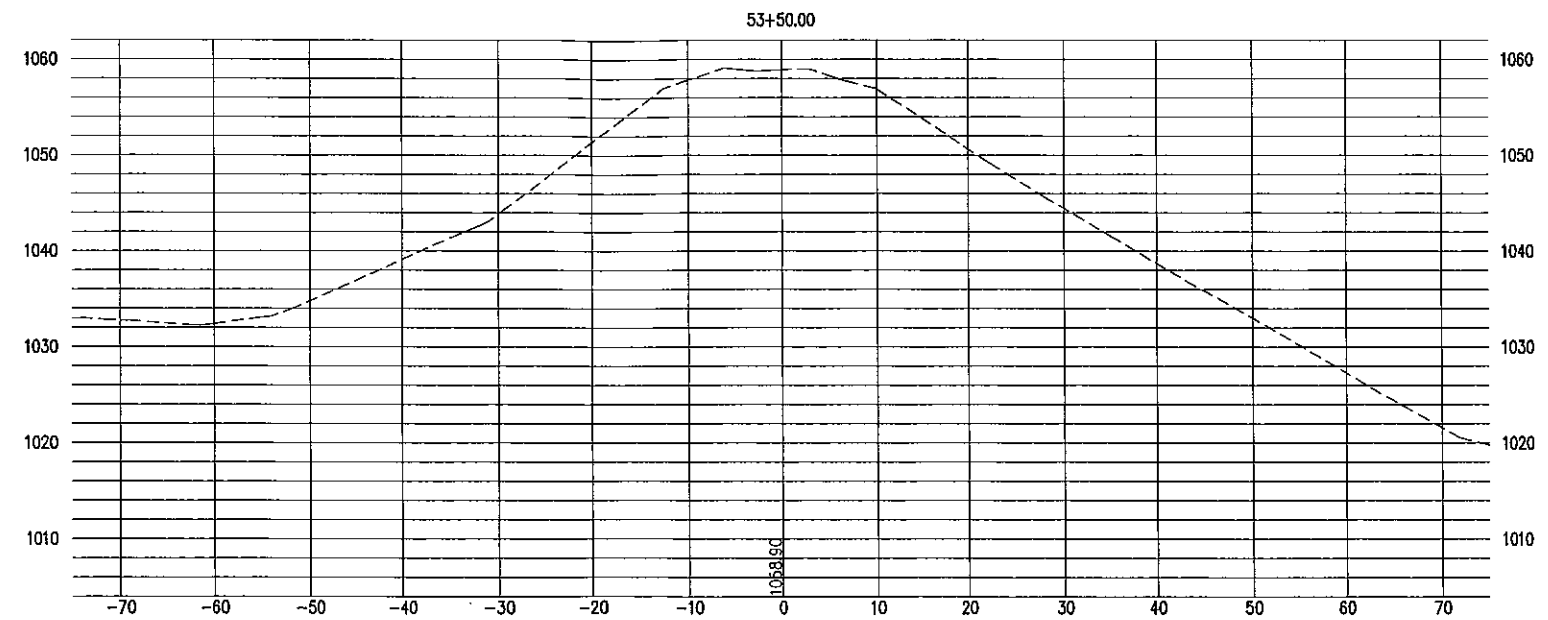
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PLAN AND PROFILE
 Sheet No. 06 of 11 Sheets

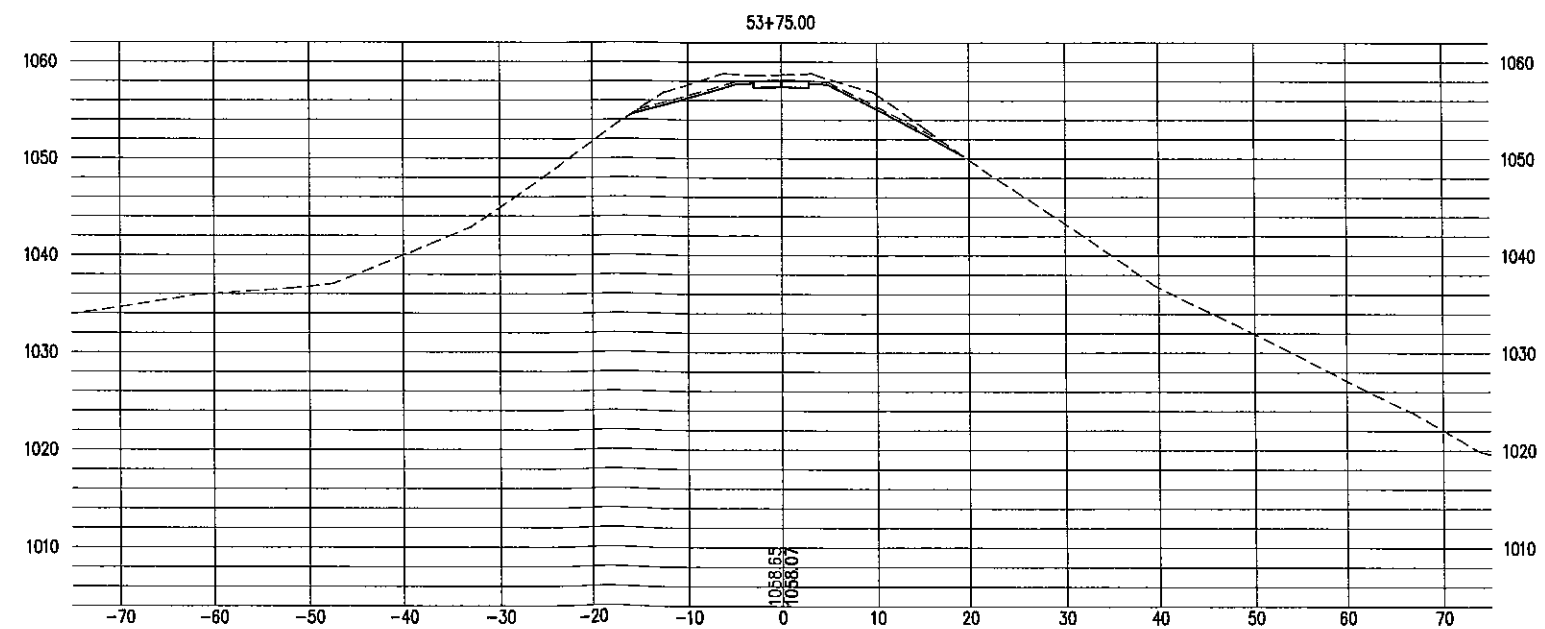
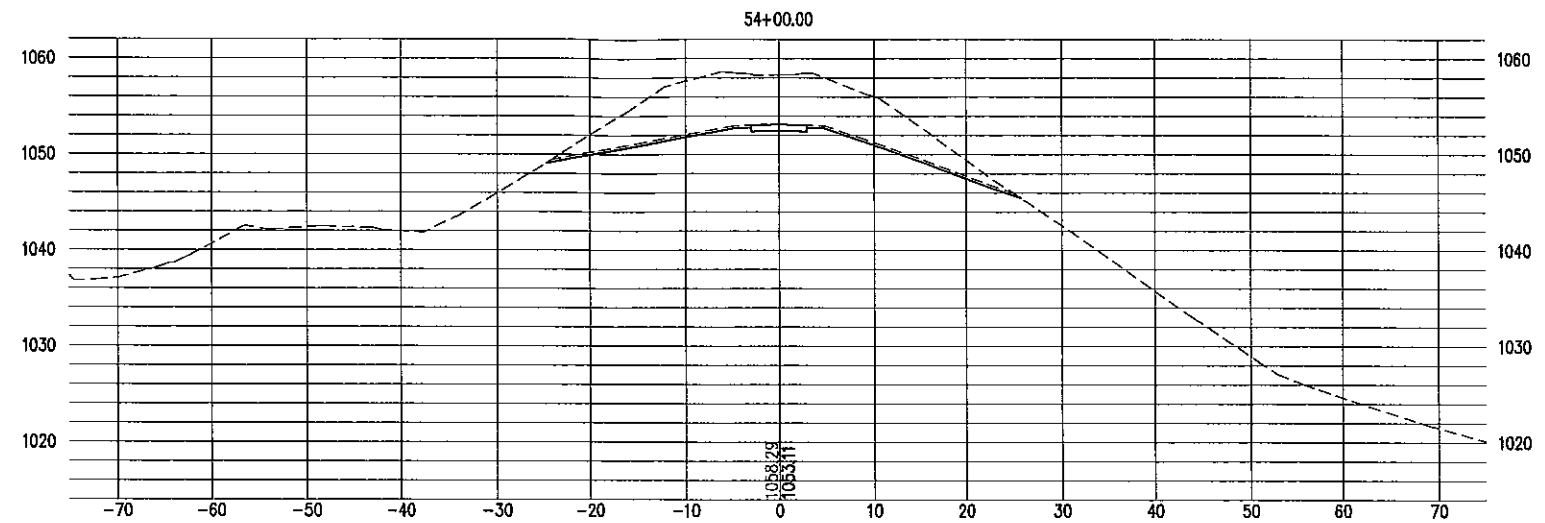


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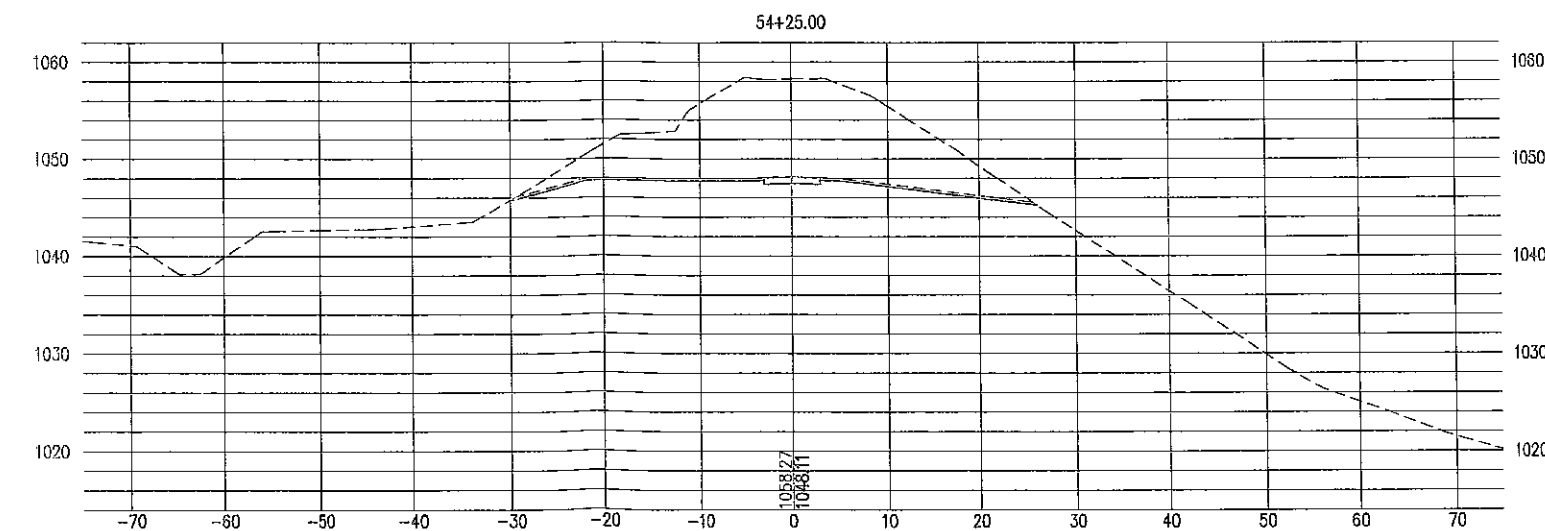
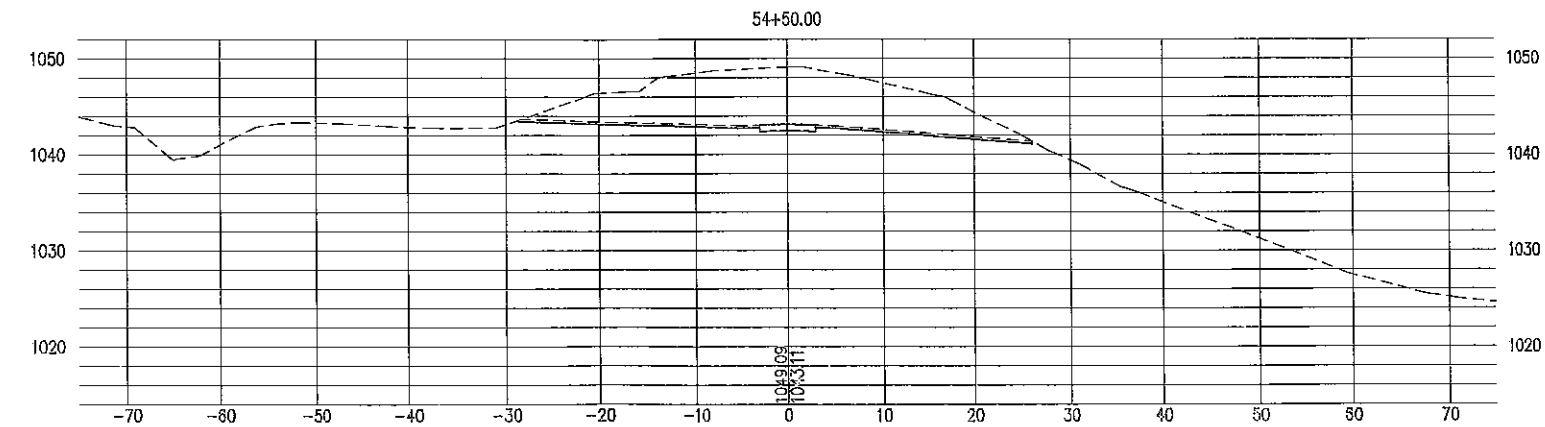
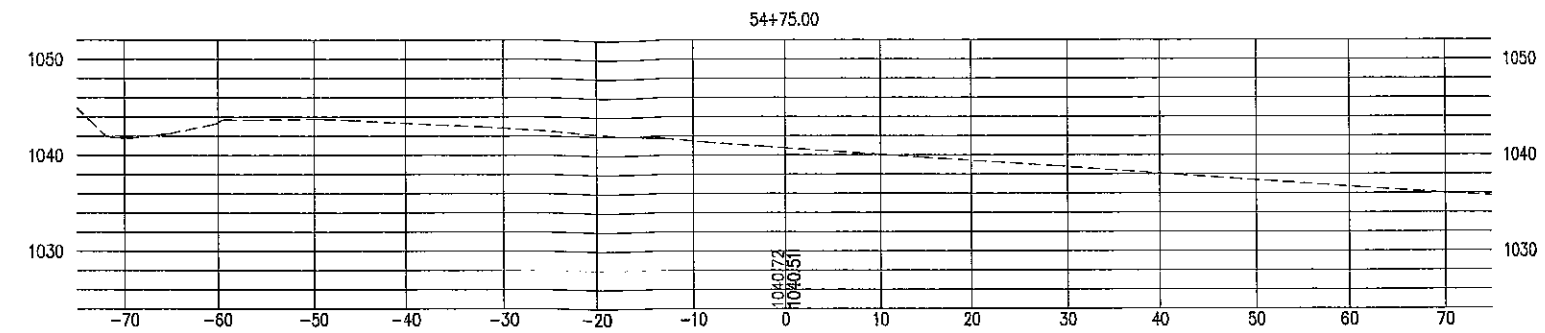


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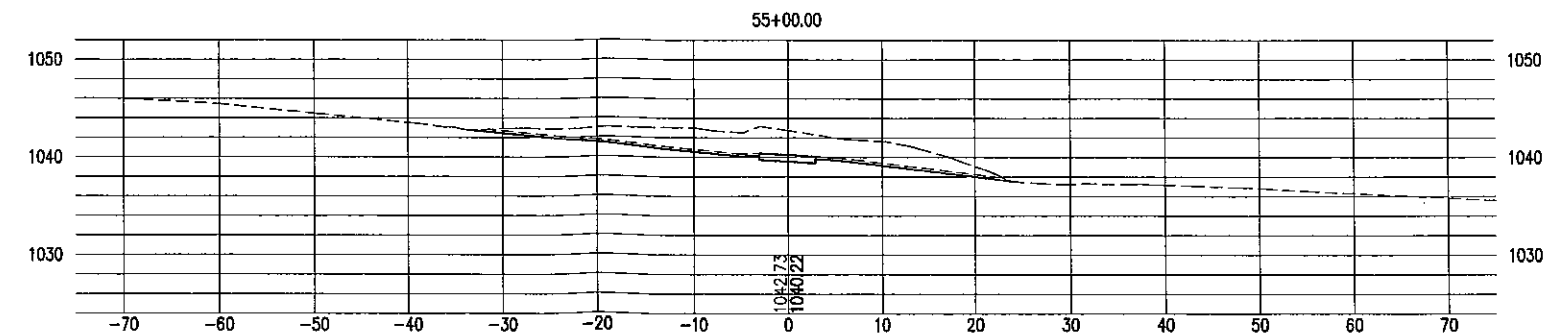
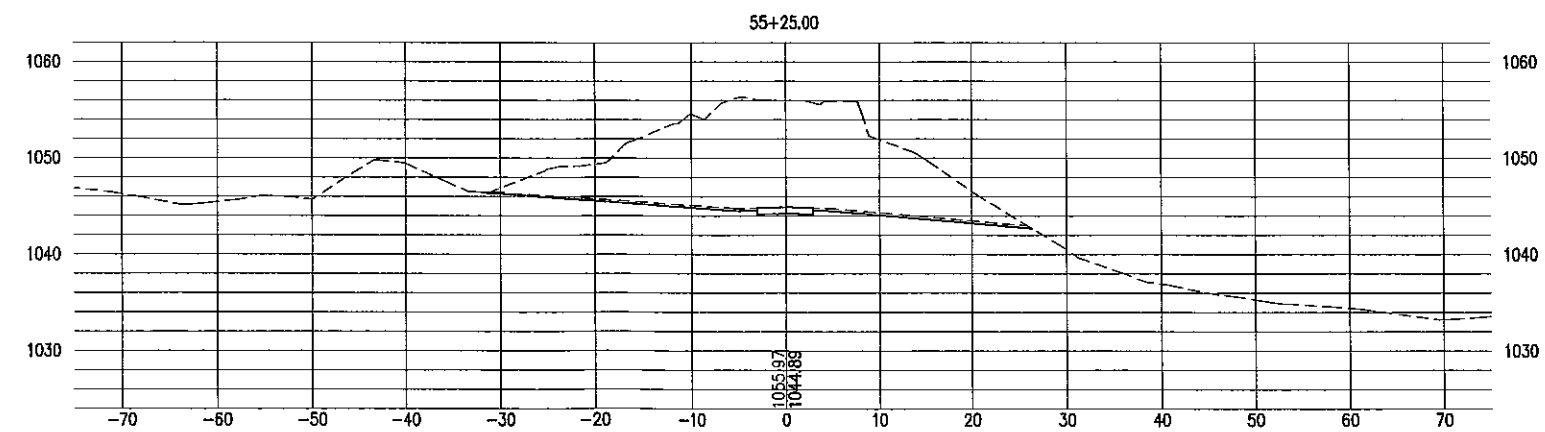
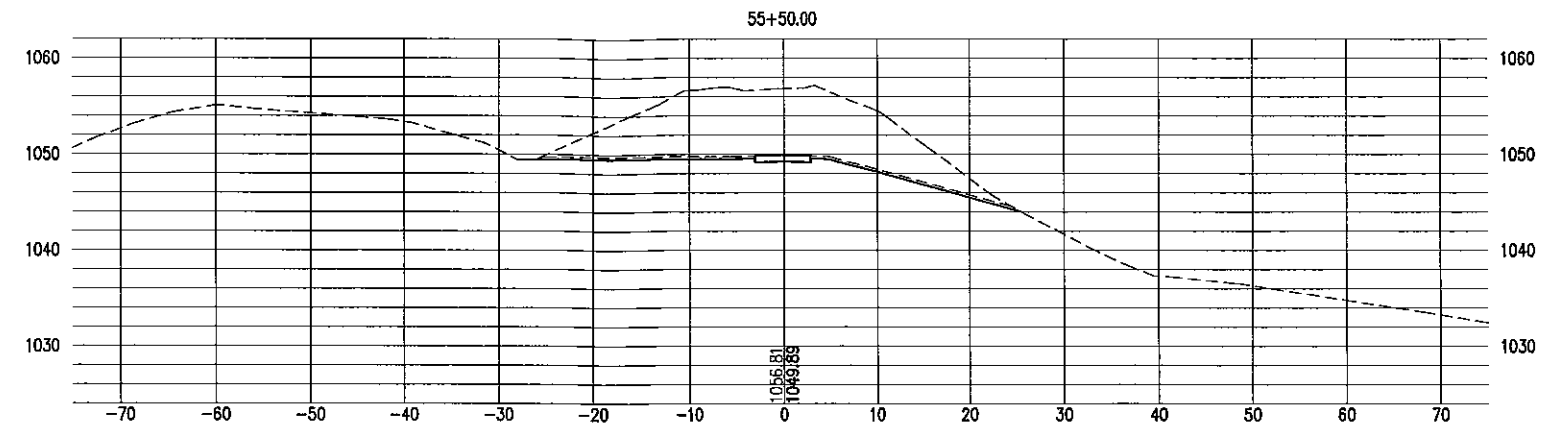


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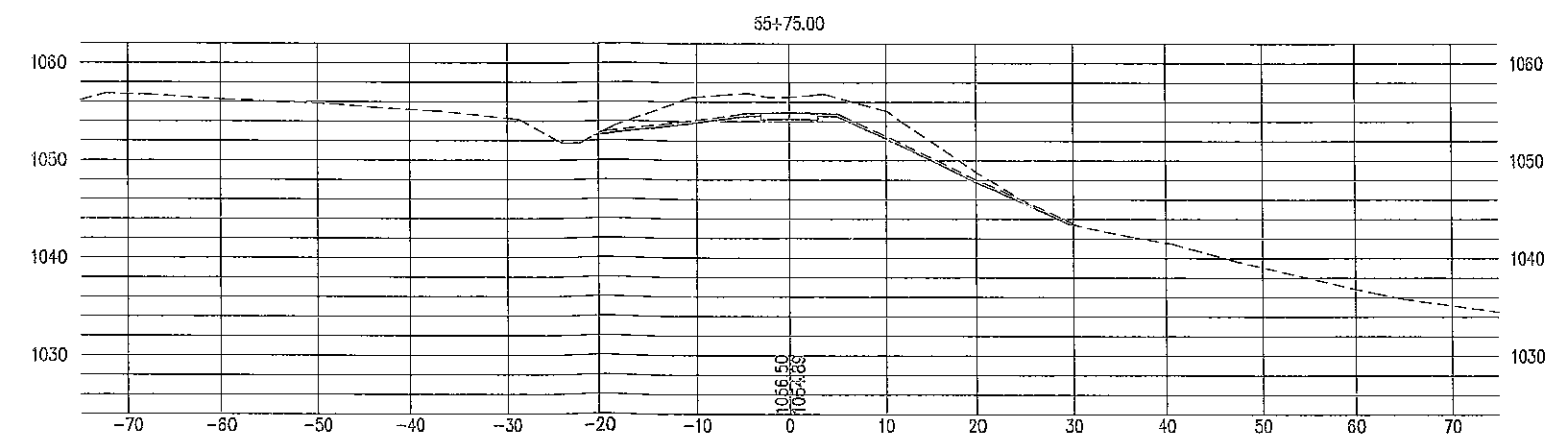
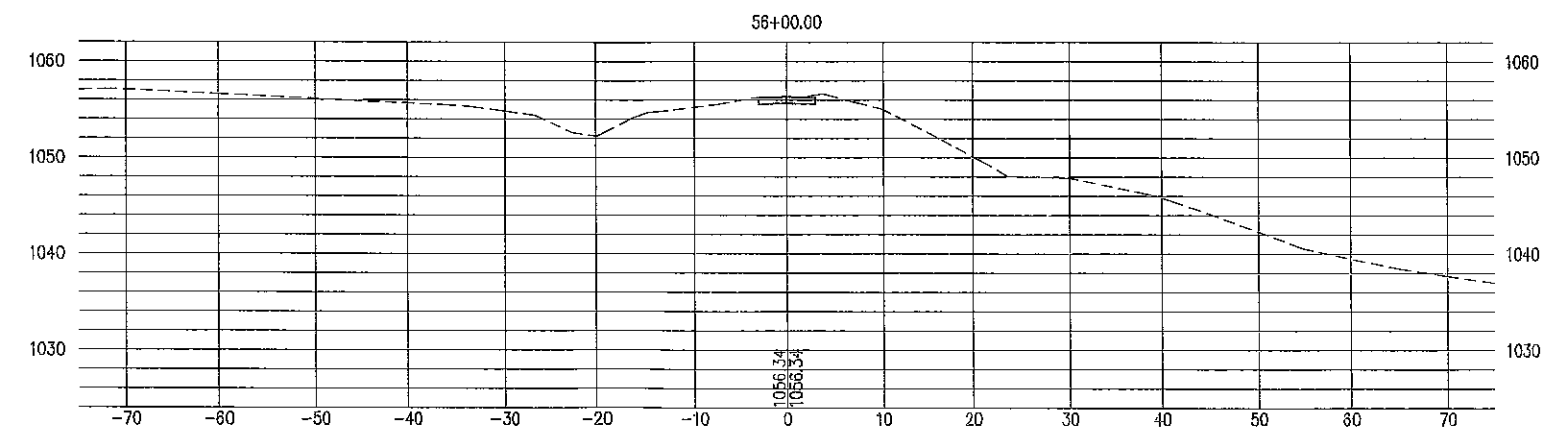
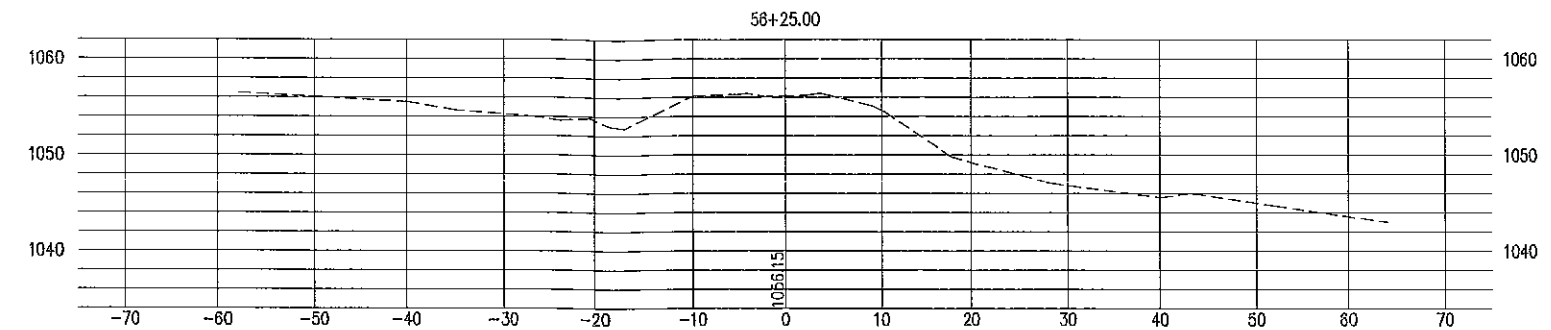


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